STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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C.L. "Butch" Otter, Governor
John H. Tippets, Director

July 1, 2016

Mr. Michael Lidgard
US Environmental Protection Agency, Region 10
1200 6th Avenue, OW-130
Seattle, WA 98101

RE: Draft §401 Water Quality Certification for the Revised Draft NPDES Permit No. ID-0021229 for the Kootenai Ponderay Wastewater Treatment Plant

Dear Mr. Lidgard:

The State of Idaho Department of Environmental Quality (DEQ) received a revised preliminary draft NPDES permit in March 2014. Due to the possible regionalization opportunity, DEQ wanted to ensure that the compliance schedules for Kootenai Ponderay Sewer District and City of Sandpoint were compatible. This caused a considerable delay in providing this certification while details of the Sandpoint certification were finalized. Thank you for your patience.

After review of the draft permit and fact sheet, DEQ submits the enclosed draft §401 water quality certification which includes a narrative description of our antidegradation review for this permit and conditions necessary to meet these rules. After the public comment period ends, DEQ will address any comments, review the proposed final permit and issue a final certification decision.

Please direct any questions to June Bergquist at 208.666.4605 or june.bergquist@deq.idaho.gov .

Sincerely,

Daniel Redline
Regional Administrator
Coeur d'Alene Regional Office

Enclosure

C: Nicole Deinarowicz, DEQ State Office
Brian Nickel, EPA Region 10, Seattle
Tanner Weisgram, Operator Kootenai Ponderay Sewer District

Idaho Department of Environmental Quality

Draft §401 Water Quality Certification

July 1, 2016

NPDES Permit Number(s): ID-0021229; Kootenai-Ponderay Wastewater Treatment Plant

Receiving Water Body: Unnamed tributary to Boyer Slough

Pursuant to the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act), as amended; 33 U.S.C. Section 1341(a)(1); and Idaho Code §§ 39-101 et seq. and 39-3601 et seq., the Idaho Department of Environmental Quality (DEQ) has authority to review National Pollutant Discharge Elimination System (NPDES) permits and issue water quality certification decisions.

Based upon its review of the above-referenced permit and associated fact sheet, DEQ certifies that if the permittee complies with the terms and conditions imposed by the permit along with the conditions set forth in this water quality certification, then there is reasonable assurance the discharge will comply with the applicable requirements of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, the Idaho Water Quality Standards (WQS) (IDAPA 58.01.02), and other appropriate water quality requirements of state law.

This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations, or permits.

Antidegradation Review

The WQS contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

- Tier 1 Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.08).
- Tier 3 Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.09).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met (IDAPA 58.01.02.052.05.c). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (IDAPA 58.01.02.052.05).

Pollutants of Concern

The Kootenai-Ponderay Sewer District Wastewater Treatment Plant (KPSD) discharges the following pollutants of concern: *BOD, TSS, E. coli*, chlorine, nitrate + nitrite, ammonia and phosphorus. Effluent limits have been developed for all pollutants of concern. There is no proposed increase in design flow for this facility.

Receiving Water Body Level of Protection

The KPSD discharges to an unnamed tributary of Boyer Slough within the Pend Oreille Lake Subbasin assessment unit (AU) 17010214PN018_02b (Boyer Slough). The unnamed tributary of Boyer Slough is designated for cold water aquatic life, salmonid spawning, primary contact recreation and domestic water supply. Boyer Slough and its tributaries have these designated uses because they are part of the Pend Oreille Lake waterbody unit P-18 (IDAPA 58.01.02.010.110 and 58.01.02.110.05). In addition to these uses, all waters of the state are protected for agricultural and industrial water supply, wildlife habitat, and aesthetics (IDAPA 58.01.02.100).

According to DEQ's 2012 Integrated Report, this AU is not fully supporting one or more of its assessed uses. The cold water aquatic life and salmonid spawning uses are not fully supported. Causes of impairment are not fully understood, but the impairment listing is based on low benthic-macroinvertebrate bioassessment scores. As such, DEQ will provide Tier 1 protection (IDAPA 58.01.02.051.01) for the aquatic life use.

The contact recreation beneficial use is unassessed in the 2012 Integrated Report, however monitoring data collected in 2015 indicates that this use is impaired and is shown as such in the draft 2014 Integrated Report. As a result, DEQ will provide Tier 1 protection only for the aquatic life use and recreation beneficial uses (IDAPA 58.01.02.051.01; 58.01.02.051.02).

Protection and Maintenance of Existing Uses (Tier 1 Protection)

As noted above, a Tier 1 review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. In order to protect and maintain designated and existing beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS such as Section 055, which addresses water quality limited waters. The numeric and narrative criteria in the WQS are set at levels that ensure protection of designated beneficial uses. The effluent limitations and associated requirements contained in the

KPSD permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS.

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited, and a total maximum daily load (TMDL) must be prepared for those pollutants causing impairment. A central purpose of TMDLs is to establish wasteload allocations for point source discharges, which are set at levels designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limitations that are consistent with wasteload allocations in the approved TMDL.

A TMDL has not yet been developed for this AU; our estimate is that this watershed might be addressed in 2019 as part of the next five year review. Prior to the development of the TMDL, the WQS require the application of the antidegradation policy and implementation provisions to maintain and protect uses (IDAPA 58.01.02.055.04).

In summary, the effluent limitations and associated requirements contained in the KPSD permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS. Therefore, DEQ has determined the permit will protect and maintain existing beneficial uses in the unnamed tributary of Boyer Slough in compliance with the Tier 1 provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

Table 1. Comparison of current and proposed permit limits for pollutants of concern.

Pollutant	Units	Current Permit			Proposed Permit			Change[a]
		Average Monthly Limit	Average Weekly Limit	Max. Daily Limit	Average Monthly Limit	Average Weekly Limit	Max. Daily Limit	
Pollutants with limits in both the current and proposed permit								
Five-Day BOD_5	mg/L	30	45	—	30	45	—	NC
	lb/day	86	129	—	86	129	—	
	% removal	85%	—	—	85%	—	—	
TSS	mg/L	30	45	—	30	45	—	NC
	lb/day	100	150	—	100	150	—	
	% removal	85%	—	—	85%	—	—	
pH	standard units	6.5–9.0 all times			6.5–9.0 all times			NC
E. coli	no./100 mL	126		406	126	—	406	NC
Total Residual Chlorine (final)	µg/L	11	—	19	9.6	—	19	D
	lb/day	—	—	—	0.032	—	0.063	
Pollutants with new limits in the proposed permit								
Nitrate + Nitrite	mg/L	—	—	—	21.5	56.2	—	D
	lb/day	—	—	—	71.7	187	—	D
Total Ammonia (October – May)	mg/L	—	—	—	2.51	—	4.85	D
	lb/day	—	—	—	8.37	—	16.2	D
Total Ammonia (June – Sept)	mg/L	—	—	—	1.67	—	4.14	D
	lb/day	—	—	—	5.57	—	13.8	D
Total Phosphorus (June – Sept)	µg/L	—	—	—	9.0	18.0	—	D
	lb/day	—	—	—	0.030	0.060	—	D

[a] NC = no change, I = increase, D = decrease.

Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

Compliance Schedule

Pursuant to IDAPA 58.01.02.400.03, DEQ may authorize compliance schedules for water quality-based effluent limits issued in a permit for the first time. The KPSD cannot immediately achieve compliance with the effluent limits for ammonia and phosphorus; therefore, DEQ authorizes a compliance schedule and interim requirements as set forth below. This compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limits as specified in the permit. At the same time, the schedule ensures that compliance with the final effluent limits is accomplished as soon as possible. At the request of KPSD, this schedule allows time for a master planning effort and to implement the preferred option to achieving their new effluent limits. Options include but are not limited to a 65 acre expansion of their reuse site; construction of a mechanical treatment plant; significant upgrades to the existing lagoon system or regionalization with City of Sandpoint.

Each of these options requires considerable amounts of time to plan, fund and construct (May 20, 2016 email and May 26, 2015 letter from KPSD). Regionalization also requires close coordination with the City of Sandpoint and their new NPDES draft permit compliance schedule. To facilitate a coordinated effort between Sandpoint and KPSD to allow for regionalization to occur, their compliance schedules are closely aligned.

DEQ authorizes interim limits in Table 2 for a period of ten (10) years from the date of the final permit. The permittee must comply with all other effluent limitations beginning on the effective date of the permit. After ten years, final limits for ammonia and phosphorus shall be met.

Interim Requirements for Compliance Schedule

1. By one (1) year after the effective date of the final permit, a progress report shall be submitted to EPA and DEQ indicating that a master planning effort has been initiated.
2. By two (2) years after the effective date of the final permit, a progress report shall be submitted to EPA and DEQ indicating that master planning is underway and is on schedule to comply with these interim requirements.
3. By three (3) years after the effective date of the final permit, a master plan shall be submitted to EPA and DEQ for review and approval. The master plan shall identify a preferred alternative that will meet final effluent limits along with project phasing, financing strategy and implementation timeline.
4. By four (4) years after the effective date of the final permit, the permittee must provide EPA and DEQ with a progress report on funding for the preferred alternative. Copy of notice of bond approval or notice of judicial confirmation is acceptable.
5. By five (5) years after the effective date of the final permit, the permittee must provide EPA and DEQ with written notice that design has been completed and approved by DEQ.

6. By six (6) years after the effective date of the final permit, the permittee must provide EPA and DEQ with a notice that bids for construction have been awarded to achieve final effluent limitations.
7. By seven (7) and eight (8) years after the effective date of the final permit, the permittee must provide EPA and DEQ with brief progress reports of construction as they relate to meeting the compliance schedule timeline and final effluent limits.
8. By nine (9) years after the effective date of the final permit, the permittee must provide EPA and DEQ with written notice that construction has been substantively completed on the facilities to achieve final effluent limitations.
9. By ten (10) years after the effective date of the final permit, the permittee must provide EPA and DEQ with a written report providing details of a completed start up and optimization phase of the new treatment system (if applicable) and must achieve compliance with the final effluent limitations of Part I.B.

Table 2. Interim Limits

Parameter	Units	Monthly Total
Ammonia (June-September)	lb/month	1,168
Ammonia (October-May)	n/a	no effluent limit (monitor and report per permit)
Phosphorus (June-September)	lb/month	282
Phosphorus (October-May)	n/a	no effluent limit (monitor and report per permit)

Mixing Zones

The KPSD outfall discharges to a small tributary of Boyer Slough. The Boyer Slough watershed encompasses approximately 5,400 acres, the majority of which is sparsely populated farm land. Boyer Slough joins Pend Oreille Lake approximately 0.68 miles from the wastewater treatment plant outfall pipe. During the summer months, Pend Oreille Lake is held at an elevation of 2062' to 2062.5' for recreational use which creates a backwater effect in Boyer Slough that extends upstream almost to the outfall. During the rest of the year, Boyer Slough is a small shallow stream. Pursuant to IDAPA 58.01.02.060, DEQ authorizes the mixing zones summarized in Table 3. A justification for the nitrate + nitrite mixing zone in Boyer Slough has been provided to

DEQ by KPSD (May 20, 2016 email and May 26, 2015 letter from KPSD summarized in Appendix A).

Table 3. Mixing Zones for Final Permit Limits

Pollutant	Mixing Zone (% of critical flow volumes of Tributary to Boyer Slough)
ammonia	25
chlorine	25
nitrate + nitrite	100*

*Mixing zone includes flow from the main stem of Boyer Slough.

Other Conditions

This certification is conditioned upon the requirement that any material modification of the permit or the permitted activities—including without limitation, any modifications of the permit to reflect new or modified TMDLs, wasteload allocations, site-specific criteria, variances, or other new information—shall first be provided to DEQ for review to determine compliance with Idaho WQS and to provide additional certification pursuant to Section 401.

Right to Appeal Final Certification

The final Section 401 Water Quality Certification may be appealed by submitting a petition to initiate a contested case, pursuant to Idaho Code § 39-107(5) and the "Rules of Administrative Procedure before the Board of Environmental Quality" (IDAPA 58.01.23), within 35 days of the date of the final certification.

Questions or comments regarding the actions taken in this certification should be directed to June Bergquist, Coeur d'Alene Regional Office at 208.666.4605 or via email at june.bergquist@deq.idaho.gov.

DRAFT

Daniel Redline
Regional Administrator
Coeur d'Alene Regional Office

Appendix A
Justifications for the Ten Year Compliance Schedule
and
Nitrate + Nitrite 100% Mixing Zone

Justification for the Ten Year Compliance Schedule

The Idaho Water Quality Standards allow DEQ to authorize compliance schedules for water quality-based effluent limits when the limits are in the permit for the first time (IDAPA 58.01.02.400.03). The Clean Water Act requires compliance with effluent limits as soon as possible. To determine the length of time, DEQ requested information from Kootenai Ponderay Sewer District (KPSD) regarding what must happen at their facility in order to meet the new limits and how long this would take. As a result of discussions and written information, DEQ determined that a ten (10) year compliance schedule for KPSD is necessary to meet their new limits for ammonia and phosphorus. DEQ has summarized their justification information below:

KPSD operates a lagoon treatment plant providing equivalent secondary treatment. The draft permit contains first time effluent limits for ammonia and phosphorus. These effluent limits are substantially lower than that currently discharged. The facility does not have the oxygen transfer capacity necessary to meet ammonia oxidation requirements. To reliably remove ammonia additional facilities would be needed which may include one of the following options:

- Activated solids capture and recycle and increased aeration
- Fixed film unit process to retain biomass and increased aeration
- Chemical oxidation
- Move outfall location
- Eliminate surface water discharge

Any of these options would require a significant amount of capital investment and planning. A ten (10) year compliance schedule will allow sufficient time to master plan future needs and alternatives, coordinate with Sandpoint for a potential regional system, and generate and implement a funding plan.

The draft permit contains first time effluent limits for phosphorus. These phosphorus limits are substantially lower than currently discharged. The existing wastewater treatment plant does not have any unit process specific for the removal of phosphorus; therefore, the facility cannot reliably meet any phosphorus limit without significant upgrades and improvements. To reliably remove phosphorus the plant would need to upgrade to either:

- a biologically enhanced phosphorus removal treatment plant or
- a chemical precipitation/filtration treatment plant.

Both options would require millions of dollars and a significant planning and funding effort requiring ten years to accomplish. Additionally, if the District's planning effort determined that land application is the best way to meet the new phosphorus limit (no discharge in summer months) the district would need time to fully outfit their land application site which could include test plots to see which crops can grow in the available land.

A note of clarification: DEQ did not include interim effluent limits for October – May for either ammonia or phosphorus. The reason for this is that the existing lagoon system cannot reliably treat for either of these pollutants so setting a limit did not make sense. The summertime effluent limits for these pollutants encourage the facility to utilize their existing reuse site but allows for some periods of discharge during this time period for system maintenance, rainy weather, upgrades and other unanticipated conditions.

Justification for the Nitrate + Nitrite 100 % Mixing Zone

The Idaho Water Quality Standards require that DEQ evaluate the discharge to determine if a mixing zone could be considered (IDAPA 58.01.02.060). Mixing zones shall not cause unreasonable interference with, or danger to, beneficial uses. Nitrate and nitrite are pollutants significant to Boyer Slough's designated beneficial use for domestic water supply. This use was designated for Boyer Slough as part of a larger effort to consolidate and link the smaller tributaries with their receiving waters. As a result, Boyer Slough has the same designated beneficial uses as Pend Oreille Lake.

To determine if nitrate and nitrite are pollutants of concern for Boyer Slough, DEQ examined all water rights for Boyer Slough downstream of the wastewater outfall. There were no water rights for domestic water supply, only irrigation. Area drinking water systems of Oden Water Association that includes Whiskey Jack subdivision do not serve water drawn from Boyer Slough for drinking water. Sand-Ida Services draws irrigation water from Boyer Slough for their customers but this use is strictly for irrigation and delivered in purple pipe. Comments to DEQ regarding the Boyer Slough water for irrigation use are that it is good nutrient rich water that enhances landscaping vegetation. On the negative side, comments regarding Boyer Slough water were that it causes the luxuriant growth of rooted aquatic plants and suspended algae that makes it difficult to draw water from Boyer Slough at certain times of the year. This condition was captured in DEQ's 2015 assessment of uses that resulted in the determination that recreational uses are impaired (draft 2014 Integrated Report). Given this examination, DEQ concluded that no domestic water supply use exists downstream of the wastewater effluent outfall to the outlet of Boyer Slough. Domestic water supply use clearly exists in Pend Oreille Lake where nitrates and nitrites would be pollutants of concern. Granting of the 100% mixing zone would not change the existing conditions. There is no proposed increase in design flow for this facility, it remains at 0.4MGD and this is the flow used for calculating effluent limits.

Other uses that might be affected by a 100% nitrate + nitrite mixing zone are cold water aquatic life and specifically, salmonid species. To determine the effect these pollutants have on salmonid species, DEQ consulted the Water Quality Criteria for Water 1986 (EPA, 1986 "Gold Book"). This reference states, "In oxygenated natural water systems nitrite is rapidly oxidized to nitrate." Nitrites do occur in the effluent in concentrations that would be harmful to salmonid species; however as discussed, nitrites are an unstable form of nitrogen and quickly convert to nitrates in the aquatic environment. The concentration of nitrates protective of salmonids is much higher than that discharged by the treatment plant. So there is no unreasonable interference with or danger to cold water aquatic life and specifically salmonids if this mixing zone were authorized.

Recreational uses were also examined to determine if this size of mixing zone would interfere with activities such as swimming or fishing. In northern Idaho lakes, rivers and streams, phosphorus is most often the limiting nutrient that determines the level of aquatic plant

productivity. Reducing the concentration of nitrogen pollutants alone (thereby reducing the size of the mixing zone) is not likely to affect the current luxuriant growth of rooted aquatic plants or algae. Therefore, this mixing zone should have no adverse effect on recreational uses. However, the new final phosphorus limits in the draft permit should result in a significant reduction of macrophyte (submerged, emergent or floating aquatic plants) productivity during summer months.

Given the lack of an existing drinking water use, no adverse effects to cold water aquatic life species or recreational uses, DEQ authorized the 100% nitrate + nitrite mixing zone within Boyer Slough.